



# Communicator

## April 2012

**Fox Hunting**  
The Hunt and The Antenna

**Radio-Active**  
Jim Smith VE7FO

**Tech Talk**  
Why We Use Baluns

## **Plus**

Meeting Minutes

President's Report

April Calendar

The Contest Contender

News You Can Lose

SEPARS Report

QRM



## **Fox Hunt Issue**

Details Page 4

**Build A Fox Antenna**

Page 5

[ve7sar.net](http://ve7sar.net)



The Monthly Newsletter of the Surrey Amateur Radio Club





# The Communicator



**SURREY  
AMATEUR RADIO CLUB**

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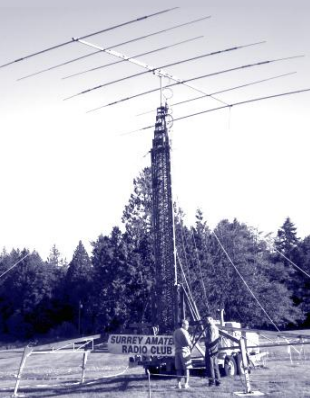
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The **SARC Communicator** is published monthly for members of the Surrey Amateur Radio Club.

SARC maintains a website at [www.ve7sar.net](http://www.ve7sar.net) that includes club history, meetings, news and other information.



## March Meeting Minutes Susan Eshelman VE7IIE—SARC Secretary

The meeting was convened at 7:00 p.m. by President John Brodie VA7XB.

### INTRODUCTION & WELCOME

John VA7XB welcomed guests and new members, and an attendance list was circulated.

### APPOINTMENT OF DIRECTORS

John VA7XB reported on the SARC Executive's recent move to fill two Director vacancies. One position will be filled by Brett Garrett VE7GM, who will serve as pro tem Director until elections at the next AGM.

### COMMUNICATOR

John Schouten VE7TI announced the winner of a contest that was run in the last edition of the Communicator, in which a Morse code message was hidden in the Seaside tour bus picture. A draw was held to determine which of the successful puzzle solvers would win the prize. The win went to Kapila Jayaweera VE7KGK.

John VE7TI announced that the deadline for content for the upcoming issue is March 25th. John VA7XB noted that we currently have two open slots for member assistance: providing articles on technical topics for the Communicator, and organizing technical presentations for monthly meetings.



### FINANCIAL REPORT

Treasurer Scott Hawrelak VE7HA provided a brief financial report. Two members were reimbursed for successfully completing a project under the kit building program: Hiu Yee VE7YXG and Gary Skett VE7AS.

Scott reminded members that the order for SARC name badges will go in shortly. There will be one more order placed later this year.

### IN THIS ISSUE

[click on the links below](#)

**Fox Hunting**  
Hidden Transmitter Searches

**Radio-Active**  
Jim Smith VE7FO

**Tech Talk**  
Why We Use Baluns

**Plus**  
Meeting Minutes  
The Contest Contender  
SEPARS Report  
News You Can Lose  
QRM  
April Calendar  
President's Report

|                                                                                                                 | SEPARS Net                          | SARC Net     |
|-----------------------------------------------------------------------------------------------------------------|-------------------------------------|--------------|
| <b>1<sup>st</sup> Tuesday</b>                                                                                   | Drew VA7DRW<br>Jay VE7OFH Standby   | Drew VA7DRW  |
| <b>2<sup>nd</sup> Tuesday</b>                                                                                   | Dixie VA7DIX<br>Alan VA7BIT Standby | Alan VA7BIT  |
| <b>3<sup>rd</sup> Tuesday</b>                                                                                   | Rob VE7CZV                          | John VA7XB   |
| <b>4<sup>th</sup> Tuesday</b>                                                                                   | Bill VE7XS<br>Dixie VA7DIX Standby  | Anton VE7SSD |
| <b>5<sup>th</sup> Tuesday</b>                                                                                   | Jinty VA7JMK                        | Bill VE7XS   |
| Want a turn at Net Control? Contact the Net Manager<br><a href="mailto:ve7ti@separs.net">ve7ti @ separs.net</a> |                                     |              |

## CLUB EXECUTIVE 2011-2012

### PRESIDENT

John Brodie VA7XB

### VICE PRESIDENT

Bill Gipps VE7XS

### SECRETARY

Susan Eshelman VE7IIE

### TREASURER

Scott Hawrelak VE7HA

### DIRECTORS

Kelvin Hall VA7KPH  
(SEPARS)

John Schouten VE7TI  
(Communicator Editor  
& Net Manager)

George Merchant  
VE7QH (Repeaters)

Bill Little VA7ZBL  
(Membership)

**SARC** hosts an Amateur Radio net each Tuesday evening at 8 PM. Please tune in to the VE7RSC repeater at 147.360 MHz (+600 KHz) Tone=110.9, (optional Tone Squelch 110.9) also accessible on IRLP node 1980 and Echo-link node 496228. On UHF we operate a repeater on 443.775MHz (+5Mhz) Tone=110.9 Coming soon, a repeater at 224.000MHz (-1.6MHz).

## MEMBERSHIP

John VA7XB noted that the membership currently stands at approx. 95 paid members.

## CONTESTING/OPERATOR SKILLS

Fred Orsetti VE7IO gave an update on the Contesting/Operator Training program currently underway, being mentored by he and Jim Smith VE7FO. A number of members are participating, and skill levels are increasing appreciably. Participants range from beginners to advanced, and operators are working in Search & Pounce and Run modes.

Fred noted that the training group was formed after last year's Field Day. While our contest results were quite good, there was clearly room for improving operating skills. The training program is effectively moving us towards that goal. John VA7XB noted that after his recent move, he expects to have his HF station back in operation shortly, and will also host periodic contesting/training sessions.

## REPEATER

John VA7XB gave a brief report on the new Repeater, and was pleased to announce that we've taken a giant step forward, having gotten agreement between the parties on the Lease document.

## IOTA DX-PEDITION

John VA7XB mentioned an upcoming DX event involving Islands On The Air. More information will be provided as available.

## SEPAR

Kelvin Hall VA7KPH gave a report on upcoming SEPAR activities. A meeting is scheduled for March 15th. On March 20th, a demonstration event will be held at the Surrey Museum in Cloverdale for kids. Also planned is an upcoming Emergency Op exercise with City of Surrey, just one of nearly 20 events scheduled between now and July 1st. Please visit the [SEPARS.net](http://SEPARS.net) website for more information.

## FOXHUNT

The date for this year's Foxhunt is confirmed as May 12th. Anton James VE7SSD, who is organizing the event again this year, gave an introduction to the Foxhunt process. There will be five foxes, and different skill levels for participants, from novice to advanced.

The event will be held at Crescent Park, White Rock, starting at 9:30 a.m. with a brief spin-up on procedures, followed by a 90-minute Foxhunt, with staggered starts. The BBQ will commence at Noon. All club members are encouraged to attend the BBQ social event, whether or not participating in the Foxhunt itself.

The Burnaby club is sponsoring warm-up sessions, on March 31st, April 14th and April 28th. See their website for more details. Anton is also considering an antenna-building workshop for Foxhunters, and this topic will get mention in the upcoming Communicator.

## SEA-PAC HAMFEST TRIP

Susan Eshelman VE7IIE gave an update on the proposed bus trip for SARC members to the 2012 Sea-Pac hamfest in Seaside, Oregon, June 1st and 2nd. SARC Exec has been discussing trip plans, and an early show of interest from members has been positive. Plans should be concluded at the March 28th Exec meeting, after which full details and registration information will be distributed to all members.

## FIELD DAY & FLEA MARKET

John VA7XB gave an update on the early phase planning for this year's Field Day. SARC has secured a \$500 grant from the City of Surrey to help defray our costs for the event. LARA is taking the organizing lead this year. As soon as weather permits, SARC members will join LARA for a survey of the proposed site.

In place of a swap meet this year, SARC and LARA have agreed to run a joint raffle, as part of the popular Cruise-In event. We now have confirmation on a table for that event, which has drawn 100,000 visitors the last three years. Dan Dangelmaier VA7AB is handling the lottery application.

## FEATURE PRESENTATION

Susan VE7IIE introduced the evening's technical presenter, John White VA7JW. John gave a very informative talk on the nature of the Sun, its interaction with the ionosphere, and solar events that effect propagation. At the next meeting, April 11th, John will give Part Two of his presentation.

With no New Business, following the 50/50 draw, the meeting was adjourned at 9:00 p.m.

# DOWN THE LOG...

## SARC Monthly Meetings

2<sup>nd</sup> Wednesday (Sept-Jun)  
1900 hrs local at the Emergency Management BC PREOC,  
14275 96th Avenue, Surrey, BC

## Weekly Club Breakfast

Friday at 0830 local  
ABC Country Restaurant at  
600 - 7380 King George Blvd.  
Surrey

## SARC Net

Tuesday at 2000 hrs local  
on 147.360 MHz (+) Tone=110.9

## SEPARS Net

Tuesday at 19:30 hrs local  
on 147.360 MHz (+) Tone=110.9

## Announcements & News

SEPARS Monthly Workshop  
Third Thursday, 1900-2130 local  
Rm. 214, 13569 - 76th Avenue,  
Surrey.

## SEPARS Training

Fourth Saturday, 0830 local,  
Firehall #1, 88 & 132nd Street,  
Surrey

## On the Web [ve7sar.net](http://ve7sar.net)

Between newsletters, watch your e-mail for announcements of events, monthly meetings and training opportunities. These announcements may also be found on our web page.

## Twitter [@ve7sar](https://twitter.com/ve7sar)

# SARC Fox Hunt

## PETA Can Relax—These Foxes Won't Get Hurt

Amateur radio direction finding (ARDF, also known as radio orienteering, radiosport, bunny hunting or fox hunting) is an amateur racing sport that combines radio direction finding with the map and compass skills of orienteering. It is a timed race in which individual competitors use a topographic map, a magnetic compass and radio direction finding apparatus to navigate through diverse wooded terrain while searching for radio transmitters. The rules of the sport and international competitions are organized by the International Amateur Radio Union. The sport has been most popular in Eastern Europe, Russia, and China, where it was often used in the physical education programs in schools.

ARDF events use radio frequencies on either the two-meter or eighty-meter amateur radio bands. These two bands were chosen because of their universal availability to amateur radio licensees in all countries. In the UK events with somewhat different rules are also run on 160 meters. The radio equipment carried by competitors on a course must be capable of receiving the signal being transmitted and useful for radio direction finding, including a radio receiver, attenuator, and directional antenna. Most equipment designs integrate all three components into one handheld device. The SARC Annual Fox Hunt will be held at Crescent Park, South Surrey, Sunday May 12, 2012. Meet at the picnic area just south of the parking lot at the corner of 129th Street and Crescent Road, 8am to 2pm

Everyone is invited and it will be a great day of fun and "hunting" and we will have an open air BBQ after the event. Even if you are a novice, we will pair you up with someone more experienced so you can learn. [See the QRM column on [Page 17](#) for practice opportunities]

Fox Hunting and this event provides the opportunity to challenge and develop one's RDF skills. So, get organized now and get your directional antennas in working order and come on out.

Any type of directional antenna is permissible, but remember that the 'fox' will be transmitting on 2

meters. A home brew directional antenna in all its various experimental forms is always a source of fun and education for all involved. A 2m handi talkie receiver is required. Should you not have one, don't worry, we have lots of spare equipment for you to use.

All interested are reminded to please register via email to Anton James, VE7SSD at [jamesadf@shaw.ca](mailto:jamesadf@shaw.ca) Indicate whether you are 'Hunting', just BBQ'ing or both. Accurate numbers of attendees is needed for planning and catering purposes.

It should be a lovely spring day, so come on out with your friends and other Hams, however do wear proper walking shoes and weather gear.

Attendance and participation in the Fox Hunt is free but attendance at post event BBQ is \$10. Payable on the day of event.

### Agenda:

8.00am Registration

8.30am Pre-start briefing and testing of equipment

9.00am Start of Hunt with teams of 2 or 3 being dispatched at 5 minute intervals

9.45am (Estimated) Last team should be dispatched

The event will last for 90 minutes. All participants are to return to the finish point within the allotted 90 minutes

11.15am Event officially ends

12.00 noon BBQ

1.30pm Announcement of winners and Award of prizes

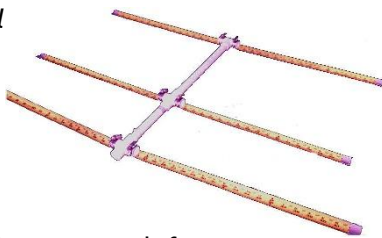
2.00pm END





## The Tape Measure Beam

*You will find this an ideal antenna for fox hunting but it also delivers great performance for everyday use.*



### Description

This antenna evolved during my search for a beam with a really great front-to-back ratio to use in hidden transmitter hunts. This design exhibits a very clean pattern and is perfect for RDF use. It trades a bit of forward gain in exchange for a very deep notch in the pattern toward the rear. (You could optimize the design for more forward gain, but at the expense of a really good notch in the pattern toward the rear.) It is a design that can be constructed using only simple hand tools (no machine shop needed) and still perform well. It has been duplicated several dozen times by other local hams and has been successfully used as a club construction project.

When I designed this antenna I had one basic idea in mind. It had to be easy to get in and out of the car when hunting for a hidden transmitter. This would be accomplished by the use of steel "tape measure" elements. These elements could fold easily when fitting the antenna into my car and yet still be self supporting. I decided to use three elements to keep the boom from getting too long.

Another of my design goals was to use materials that were easy to obtain. I chose to use Schedule-40 PVC pipe and fittings available at my local hardware store for the boom and element supports. These kept the cost for the antenna very low. The element supports consist of PVC crosses and tees.

Since I had never seen any plans for an antenna using elements made from 1 inch wide steel "tape measure," I had to do the design myself. To assist in the design I used a shareware computer aided yagi design program written by Paul McMahon VK3DIP. It allowed me to optimize the antenna for the cleanest pattern combined with the best front-to-back ratio.

### Performance Predicted by YAGI-CAD

GAIN 7.3 dBd

Front-to-Back Ratio >50 db

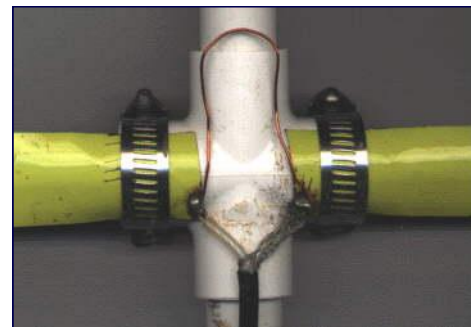
3 db Beamwidth E = 67.5 degrees

3 db Beamwidth H = 110 degrees

When I first built this beam I found it needed a matching network of some kind to have a low SWR. My

first attempt was a Gamma match. This was unwieldy. The driven element could barely handle the weight and the Gamma match itself was not very flexible. The best matching network turned out to be a "hairpin match." This is simply a 5 inch length of wire that is connected across the feed points of the driven element. The antenna has some capacitive reactance without the matching network. The 5 inch length of wire has just enough inductance to cancel the capacitive reactance. This resulted in a better match than anything else I had tried.

The wire I used for the hairpin match was enamel insulated 18 gauge solid. Other hams who have duplicated this beam have used just about anything they had on hand. 14



gauge house wire works well, so does a length of 22 gauge hookup wire. It does not seem to matter if it is stranded or solid, use whatever you have available. This results in a very good match across the two meter band once you have adjusted the distance between the halves of the driven element for minimum SWR. (1 inch apart on my prototype).

I used a pair of shears to cut the tape measure elements to length. An old pair of scissors will probably do as well. No matter how you cut the elements be very careful. Those edges are very sharp and will inflict a nasty cut if you are careless. Use some sandpaper to remove the really sharp edges and burrs resulting from cutting the elements to size. I put some vinyl electrical tape on the ends of the elements to protect myself from getting cut. I encourage you to do the same. It will probably be best if you round the corners of the elements once you cut them. Wear safety glasses while cutting the elements. Those bits of tape measure can be hazardous.

The RG58 coax feedline is connected directly to the driven element. No matter what method you use to attach the feedline, make sure you scrape or sand the paint off the tape measure element where the feedline is attached. Most tape measures have a very durable paint finish designed to stand up to heavy use. You do not want the paint to insulate your feedline connection.

If you are careful, It is possible to solder the feedline to the element halves. Care must be taken since the steel tape measure does not solder easily and since the PVC

*(Continued on page 6)*

supports are easily melted. You might want to tin the tape measure elements before mounting them to the PVC cross.

If you decide not to solder to the tape measure elements, there are two other methods that have been used to attach the feedline. One method employs ring terminals on the end of the feedline. The ring terminals are then secured under self tapping screws which hold the driven element halves. This method does not allow you to tune the antenna by moving the halves of the driven element. 6-32 bolts and nuts could be used if holes are drilled in the elements near the ends. If the bolt heads are placed nearest the PVC fitting, you could secure ring-terminals with nuts and lock washers. Another possibility is to simply slide the ends of the feedline under the driven element hose clamps and tighten the clamps to hold the ends of the coax. I know this is low-tech, but it works just fine.

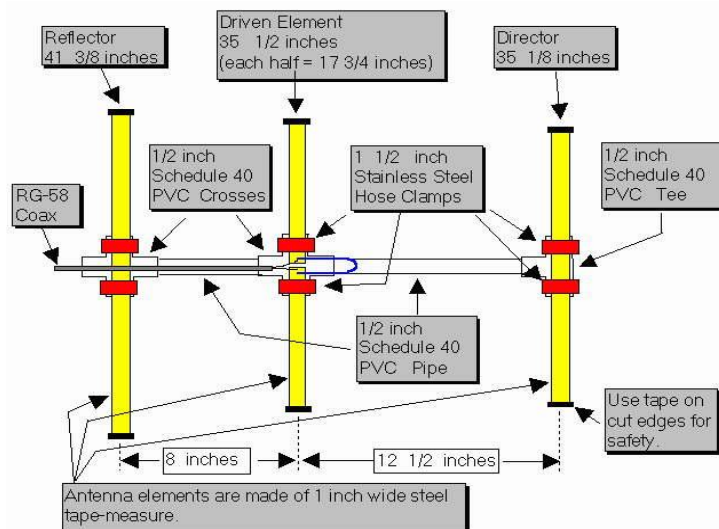
Stainless steel hose clamps are used to attach the driven element halves to the PVC cross which acts as its support. This has the added benefit of allowing you to fine tune your antenna for lowest SWR simply by loosening the hose clamps and sliding the halves of the driven element either closer or further apart. By using the dimensions specified, I found that the SWR was 1:1 at 146.565 Mhz (our Fox-Hunt frequency) when the two elements were spaced approximately 1 inch apart. Figure 1 shows the method used to attach the driven element to the PVC cross.

I used 1 1/2 inch hose clamps to attach all the elements on my prototype beam. Others who have duplicated my design have used self tapping screws to attach the elements to the PVC crosses and tees. Performance is the same using either method. The screws are much less expensive but they do not hold the elements as securely. If you do not use 1/2 inch PVC fittings but instead use 3/4 inch, make sure the hose clamps you buy are large enough to fit.

If you wish a slightly neater looking beam, use the self tapping screws. If you do not mind spending a few more dollars for the hose clamps, use them instead. If I were to build another beam I would use screws for the director and reflector, and hose clamps for the driven element. That would give me the best of both methods.

Rubber faucet washers have been used by some builders between the tape measure element and the PVC fittings on the director and reflector. These allow for the tape to fit the contour of the PVC fitting and will make the antenna look better. Now you know what to do with those washers left over from the assortment you once purchased; You know the ones I mean, the washers that do not fit the faucets you have in your house. If you are an apartment dweller, ask around, these things are stashed in almost every homeowners basement or garage.

### Construction:



Cut a length of tape measure to 41 3/8 inches. It will be the Reflector element. Cut two lengths of tape measure to 17 3/4 inches. These will be used for the Driven element. Cut one length of tape measure to 35 1/8 inches. It will be used for the Director. Once you have cut the tape measure to length, put vinyl tape on the cut ends to protect yourself from the sharp edges. You will want to scrape or sand off the paint from one end of each of the driven element halves so you can make a good electrical connection to the feedline.

If you are planning to solder the feedline to the driven elements it is best to tin the elements first before attaching them to the PVC cross. If you don't, the PVC will melt as you apply heat to the element. It would be a good idea to also take the time to form the wire used for the hairpin match into a "U" shape with the two legs of the "U" about 3/4 inch apart. Tin the ends of the hairpin if you plan on soldering it to the driven element. If you tin 1/4 inch of each end of the hairpin it will leave 4 1/2 inches to shape into the "U".

You will need to cut two lengths of PVC pipe to use as the boom. One should be cut to 11 1/2 inches. It is used to form the boom between the Director and the driven element. The other piece of PVC should be cut to 7 inches. It will be used between the Reflector and the Driven element. Just about any saw will cut through the soft PVC pipe. I used a hacksaw. When we mass produced this antenna as a club project, we marked the pipe and used a portable jig saw to cut the lengths in assembly line fashion. It took longer to measure the pipe than to actually make the cuts. Since the pipe is available in ten foot lengths, you can make a few beams from a single 10 foot length. In any case, you might want to cut a few extras lengths for your friends. They will want to duplicate this once they see your completed antenna.

(Continued from page 6)

At this time you can pre-assemble the PVC boom, crosses and tee which will support the tape measure elements. I did not use any cement or glue when I assembled mine. The PVC pipe is secured in the fittings with a friction fit.

The hose clamps I used are stainless steel and have a worm-drive screw which is used to tighten them. They are about 1/2 inch wide and are adjustable from 11/16 inch to 1 1/2 inch diameter. Attach the tape measure elements to the PVC fittings as shown in the accompanying drawing. It is normal for the Reflector and Director elements to buckle a bit as it is tightened to the PVC Tee and Cross. You can eliminate this buckle if you use the washers and self tapping screws to attach these elements instead of the hose clamps. I do not think the beam will withstand as rough a treatment as when hose clamps are used.

#### How does it perform?

Once you have completed your beam you probably will be interested to see if it performs as well as the computer predicted. The SWR should be less than 2:1 across the entire two meter band. The front-to-back ratio is predicted to be very good with the antenna exhibiting a very deep notch in its pattern towards the rear. The YagiCad 4.1 program produced these antenna pattern graphs showing the pattern you should expect.

#### How does the tape measure beam "measure up?"

WB4SUV and WA6EZV used a storage scope connected to a copy of this antenna constructed by KC8FQY and provided

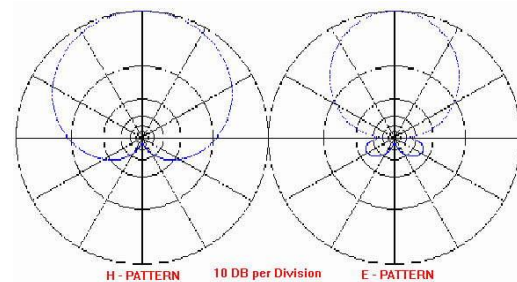
the picture of the actual antenna pattern. I am very happy to see that the computer prediction of a clean pattern with a really great front-to-back ratio was accurate. What do you think?

#### Summary

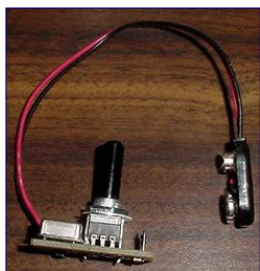
This beam has been used on Fox-Hunts, on mountain tops, at local public service

events, outdoors, indoors in attics, just about everywhere. The SWR is typically very close to 1:1 once adjusted. Front to back performance is exactly as predicted. The null in the rear of the pattern is perfect for transmitter hunts. When tested using a sensitive field strength meter and a low powered fox transmitter, full scale readings were seen from a distance of ten feet. With the same field strength meter I was able to point the antenna away from the transmitter and move the reflector element to within a few inches of the transmitter antenna and still not see a reading. I don't have the facilities to verify a 50 db notch as predicted by the Yagi-Cad software but it sure seems close. The flexible elements have taken a lot of abuse. My antenna has seen a lot of use and has held up quite well. Best of all, when on a fox-hunt, this beam is a breeze to get in or out of the car.

~Joe Leggio WB2HOL



## K0OV Offset Attenuator



An **offset attenuator**, sometimes called an **active attenuator**, is used in transmitter hunting to shift the receiver frequency 2 MHz or 4 MHz up or down from the transmitted frequency. This solves the problem of the main frequency leakage into the receiver that essentially renders a standard

attenuator useless when getting close to the transmitter. It is good for getting close (within a foot) to perhaps a watt or two. If you will be hunting higher power transmitters, then a shielded box might be necessary and possibly a switched 20dB attenuator to keep the module from getting saturated with the unwanted signals. The offset is available in either 2 Mhz or 4 MHz, and both seem to work just fine. The 4 MHz offset is probably preferable to reduce the possibility of inband interference. Generally, the 2 MHz is used for receivers that cannot tune out of band.

My experience is only using it on 2M but others have used it quite successfully on the 440 MHz band.

The offset attenuator modules are on a PC board 3/4" x 1 1/4". The kit consists of the circuit board with all the surface mount components soldered in place, and the other parts necessary to complete the unit (diode, potentiometer, crystal, and 9V battery leads.) The surface mount components include all capacitors, resistors, and the voltage regulator. An enclosure is not included. When ordering, please specify either a 2 MHz or 4 MHz offset. Included with each kit is a one page schematic and parts list.

#### Ordering Information

Please email me first to confirm what kits you are purchasing and if you are ordering the **2 MHz or 4 MHz offset** (2 MHz is normally used for receivers that can't tune out of band.) My email address is: [marvin@west.net](mailto:marvin@west.net)

This kit is provided with permission from Joe Moell, K0OV. It was originally featured in the 73 Magazine Homing In column for May 1998, and more information is available on the [HomingIn](http://www.homingin.com) website.

*Ed. Note: The March/April 2012 RAC TCA magazine also features an article by Lou VE7CGE on building an attenuator*



## The Contest Contender

Fred Orsetti VE7IO & Jim Smith VE7FO

### WPX SSB Contest

#### Contest training sessions 8 and 9

There were 8 operators out for contest session 8, the ARRL DX SSB contest. For two of the operators it was their first time at a training session. Susan, VE7IIE, started out in the S&P mode and found that she really enjoyed the experience. Rob, our white cane member, managed a few hours of S&P in front of the radio making a steady number of Q's.

Mike, VE7ACN, joined us for both number 8 and 9 sessions and helped in mentoring the operators. Oh yes, he made Q's in both contests, lots of them. Maybe that should be lots and lots and lots of them.

Did we have a major forward leap with the CQ WW WPX SSB contest? Well here are the numbers and while the two contests are different in terms of mults you still have to make the Q's so you decide.

Comment from VE7FO - Bloody right we did. Observing our ops during the last two hours was way more exciting for me than anything the Vancouver Canucks ever did.

In the ARRL DX SSB contest we made 637 Q's with 193 mults for a reported score of 354,000 for 25.5 hours of operation - not bad for a training group. This is 25.0 Q's/hr for the time we were on the air.

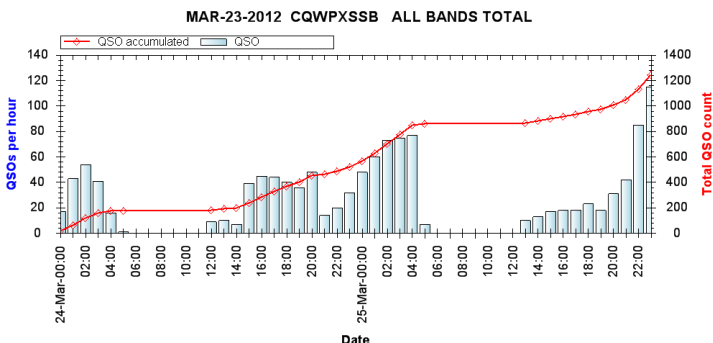
In the CQWW WPX SSB contest we made 1238 Q's with 669 mults for a reported score of 2,216,397 for 32.5 hours of operation. This is 38.1 Q's/hr for the time we were on the air. This is 41% increase in the number of Q's per hour.

Some of the highlights were:

- Max rate achieved by the station, 174 Q's/hr for a ten minute run
- Max rate for the station, 122 Q's/hr for a 60 minute run.
- In the last two hours of the contest VE7JT and VE7IIE between them made 200 of our 1238 QSOs.
  - o This was Susan's first experience in Run mode. Conditions were horrendous, 15m was wide open to Japan and the band was jammed with competitors. There were two very strong stations so close to Susan's frequency that we had no trouble understanding what they were saying while she worked right through them, making Qs at a rate of about one a minute.

- They also made 64 of our 669 multipliers during those two hours.
- Lots of good DX worked. 107 countries - DXCC in a weekend - not too shabby.
  - o Africa 8 - including Djibouti, Comoros and Namibia
  - o Asia 15 - including Qatar, Kyrgyzstan, Kazakhstan, Bahrain and Uzbekistan
  - o Europe 46 - including Moldova, Montenegro, Dodecanese
  - o N America 15 - including Martinique, Turks & Caicos and El Salvador
  - o Oceania 10 - including S Cook Is, New Caledonia, Brunei and E Malaysia
  - o S America 13 - including Tobago, Bonaire, Curacao and Suriname
- More operators progressed to the running mode.

Here's a graph of QSO formation over the duration of the contest.



#### Things to note

- The horizontal axis is UTC time, not local.
- The left axis shows QSOs per hour
- The vertical bars show how many QSOs were made in each hour
- The right axis shows the total QSO count.
- The red line shows the increasing QSO total over time.
- Having both op positions running, as in the last two hours, made a huge contribution to the QSO count.
  - o It's almost unheard of in contesting to make 16% of your total Qs in the last two hours. Usually the Q rate



flatlines a few hours before the end and you're desperately tuning around to find someone you haven't worked.

- o Shows that we're going to be leaning on the non-running ops to dip their toes into the Running adrenaline rush.

*I had a great time contesting yesterday. After scrounging around the bands in search and pounce mode, Jim finally put me into run mode... I loved it! Can't say enough about Fred and Jim -- hospitality, eagerness to teach and support... they're both just great mentors. Thanks for reminding me that this is an opportunity not to be missed.*

~ Susan VE7IIE

With only a couple more contests left before Field Day this past weekend was very reassuring that our operators will be up to the challenge of achieving a winning score.

If, on Field Day, we average 60 QSOs per hour for the entire station that's 1440 QSOs which is about twice as many as last year. We now have several operators who can achieve that rate and better all on their own.

Still, in this contest we averaged 38 Qs per hour over an operational period of about 33 hours, isn't that a long way from 60 per hour? Yes it is. But consider this:

- In this contest we had 2 op positions. On FD we'll presumably have 3, a 50% increase.
- In this contest we operated for about 66% of the available time. On FD we'll operate for 100% of the available time.
- The combination of these two works out to a bit more than double the opportunity to make Qs than in this contest.
- This ignores the fact that on FD we'll have more ops trained to Run.
  - o As the graph shows, you can very easily make two to three times as many Qs per hour Running than you can by tuning around and calling people.
- It also ignores the contribution from GOTA and the VHF/UHF positions.
  - o Well, GOTA isn't expected to contribute a lot of Qs as the objective for this position is quite different from that of the other HF positions.
  - o The V/U position can make a significant contribution if 6m opens, which it often does on FD. The FD planning has to make it possible to maximize contacts in addition to those made on FM.

In addition, what counts on FD is not total QSOs, it's total QSO points.

- 1 SSB Q is worth 1 point
- 1 CW Q is worth 2 points
- 1 RTTY Q is worth 2 points

We have more CW and RTTY operators than last year. As CW and RTTY QSOs count twice as much as SSB QSOs I think we're going to surprise a few people.

Of course, this all depends on the propagation conditions. If they're poor our score will be too. However, so will all our competitors'.

It was obvious last year that we needed a Station Manager on duty during the entire 24 hours of Field Day (no need to duck, it won't be the same person for all those hours). It will be the SM's job, among other things, to make sure that there's always an op in every chair and we're on the right bands, modes and antennas at the right time (and, ahem, that the antennas are pointing the right way).

We're going to make a start at SM training but there isn't a lot of time left to do it before FD so it won't be as thorough as we'd like. Still, it should make for a smoother and more efficient operation than if we don't do this.

~Jim Smith VE7FO

~Fred Orsetti VE7IO

## Titanic QRP Event

To kick-off the 100th anniversary commemoration of the sinking of the Titanic. From Special Event Station WØS operating from the Titanic Museum in Branson, Missouri April 13, 2012 from 7:00 pm to 10:00 pm CDT.

### Frequencies

40 Meters 7.055 to 7.060 MHz

80 Meter 3.555 to 3.560 MHz

Remember this is "QRP" 5watts or less. Please check our website

[www.w0s.org](http://www.w0s.org) for QSL instructions This is not a contest, this is a commemoration of the operators who stayed with the ship on that fateful cold night to send the CQD/SOS distress signal. We honor respect their commitment to saves lives. WØS will make every effort to answer any and all calls made to us. Please be patient and space out your calls.

If you have any questions, please communicate to [erecom@hotmail.com](mailto:erecom@hotmail.com) or [K9ZTV@socket.net](mailto:K9ZTV@socket.net)

Kent Trimble, K9ZTV & Al Gallo, WØERE  
TITANIC WØS/QRP Event Coordinators, Branson, Mo



## Titanic Special Event Callsign

The special callsign of GB100MGY has been obtained by and will operate from Fort Perch Rock Marine Radio Museum, New Brighton, Wirral, U.K.

We will be active from 6th to 26th April on all amateur radio bands for the 100th anniversary of the Titanic sinking.

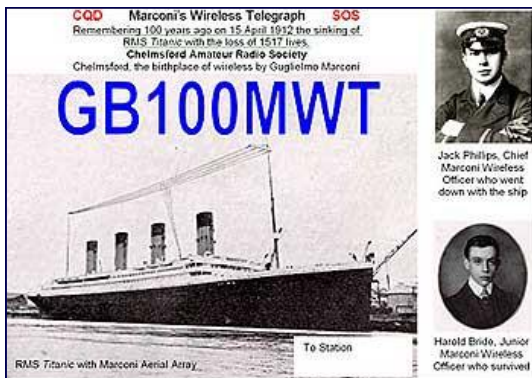
We also have special permission from OFCOM to use this GB100mgy callsign on the 501 to 504 khz band and

will be transmitting on 502khz cw. We can use this callsign on 502khz from 12th April until 18th April and will operate this band mainly in the evenings.

An Overnite will take place on the 14th/15th April as it was this 500khz band where Titanic originally sent her CQD and SOS calls/distress messages from.

See website: [fortperchrockmarineradiomuseum.co.uk](http://fortperchrockmarineradiomuseum.co.uk)

also see [gb100mgy-fortperchrock.co.uk](http://gb100mgy-fortperchrock.co.uk)



## Titanic Movie - The Last Signals

The Last Signals is the story of the sinking of the RMS Titanic from the point of view of its Marconi Telegraph Operators.

Harold Bride, the Junior Operator, is the focus of the film. John Phillips is the Chief Operator.

This film was put together attempting to be the most historically accurate representation of the sinking of the Titanic. The sets were painstakingly made to represent the real Titanic's Marconi room using several sources- ship blueprints, photographic evidence, and first hand accounts. The story was pieced together and recreated to be exactly as the real story was, and in many places the scene unfolds pretty much word for word as it did on the real Titanic.

Over two years in the making, this film is only the shortened version of the feature film (as of now still in post-production). The feature film depicts more scenes aboard the Titanic. In addition to showing more of the Titanic story, it also depicts more aboard the Carpathia, and large segments of the story take place in New York City during the weeks of the US Senatorial Investigations, where not only do we see the world's reaction to the sinking, but we also see Harold Bride's recovery from the disaster. Watch the 42 minute movie The Last Signals

[youtube.com/watch?feature=player\\_embedded&v=7-AWbrdNo58](http://youtube.com/watch?feature=player_embedded&v=7-AWbrdNo58)

## SEA-PAC 2012 BUS TRIP

On June 1st and 2nd, SARC is sponsoring a bus trip to this year's Sea-Pac hamfest in Seaside, Oregon. This year marks the 30th Annual Sea-Pac convention, which is the largest ham event in the Pacific Northwest.

SARC members, family and friends will be transported by luxury coach for this great two-day holiday to one of the most beautiful oceanside spots in the Northwest. Traveling as a group not only makes the trip more affordable, it gives us a great opportunity to relax and socialize.

Our general itinerary is for an approx. 7am departure on Friday, June 1st, with several pick-up spots. We'll arrive in Seaside mid-afternoon for hotel check-in, with time to relax before the Sea-Pac spaghetti dinner.

Sea-Pac offers a full slate of events on Saturday, from seminars to the famous Flea Market. Visit their website [www.seapac.org](http://www.seapac.org) for details. While hams are attending seminars, swap meet, etc., family members (kids welcome) can enjoy a coach tour of local sights in nearby Cannon Beach and Astoria, enjoy the beach and tax-free shopping in picturesque Seaside.

Use the registration form at [ve7sar.net/seaside.htm](http://ve7sar.net/seaside.htm) to book your spot on the trip today. SARC's package price includes transportation and registration for Sea-Pac events. Sea-Pac has arranged discounts with local hotels, and you'll need to make your own hotel booking. Please don't delay in making hotel reservations, as rooms sell-out very quickly for Hamfest each year. SARC members are being offered earlybird discounts for prompt registration. Use the form below to register and make payment. Make your credit card payment online via PayPal, or phone Susan Eshelman VE7IIE at (778) 840-4803 to make credit card payments by phone. Call or email Susan [semantiks@gmail.com](mailto:semantiks@gmail.com) or Scott Hawrelak VE7HA [scott\\_hawrelak@telus.net](mailto:scott_hawrelak@telus.net) (604) 590-6544 to make other payment arrangements.

Earlybird discounts will end on April 15th and from that point, remaining seats on the bus will also be offered to members of other local clubs. Register today to secure your spot, and join SARC members for a well deserved weekend off at Sea-Pac 2012! See the SARC website <http://www.ve7sar.net> for details.





## Radio-Active Susan Eshelman VE7IIE

### Jim Smith VE7FO

Today we're pleased to introduce a new SARC member whose presence was felt even before his name hit the membership roster. Jim Smith VE7FO is now well known to those participating in the Operator Skills Training program currently being mentored by he and Fred Orsetti VE7IO. Jim first became involved with SARC last year, when he offered to design a vee-antenna for Field Day. He joined the club around that time, and has continued to make a significant contribution.

Jim has been active in the hobby for a great many years, getting his Basic/Morse license in 1953, adding Advanced a few years later. He got his licence while enrolled at the Royal Roads Military College in Victoria, but his interest began well before that. As a nine-year old, living in a village on the outskirts of Montreal, Jim used to while away the hours standing in the doorway of the local radio repairman's shop, watching for hours as the man fixed radios.

A few years later while attending Qualicum College, he learned to operate a two-way radio while in the school's Army Cadet corps. The Qualicum cadets were joined by boys from other private schools on Vancouver Island, using the Army frequencies to train on radio together. Around age 16, Jim bought a bug (he still has it) and began using it with the Army radios. These many years later, running CW is still one of his favourite pastimes.

For VE7FO, contesting represents the best of the best in Amateur Radio, starting with CW, then RTTY, then voice. His love of CW comes simply from the joy of practicing something you've gotten good at. For contesting, CW is favoured because it gets through the interference better than other modes. RTTY is a second favorite, because something has to be next.

Jim first got the contesting bug while working on the North Coast Distant Early Warning radar line. Stations set-up for emergency comm were available for use by licensed hams, so VE7FO began to do some contesting. Two certificates on his wall memorialize Jim's first DX contests in 1958. As the only operating VE8, the call was worth some points and he racked up a respectable score on his first go. He has been #1 in BC in many contests as well as #1 in Canada in the 2007 ARRL Sweepstakes, the 2006 ARRL RTTY Roundup and 2006 CQ WW WPX contests.

He is also an operator at the big VE7UF contest station in Courtenay as well as being the operator recruiter for the station. This station has many Canadian firsts to its credit, as well as ranking #4 in the World on occasion in the High Power Multi Operator Multi Transmitter category.

In 2007 Jim was inducted into the ARRL A-1 Operator Club. He is very proud of this achievement as it is not something you can apply for, you are nominated by your peers.

In his professional life, Jim's experiences have presented a number of opportunities for crossover with Amateur Radio. His first job was with the telephone company, during the dog days of manual exchange operators. He went on to enroll at UBC, but got too involved with his ham activities, and began looking for a job again.

He went on to assist Canadian Aviation Electronics as a technician on both the Pinetree and Mid-Canada radar lines, focused on Russian invasion detection. He later worked on Federal Electric's DEW line radar along the North Coast. Jim's experiences as a radar and communications tech have also benefitted his Amateur Radio practice.

Years later, with a degree in Electrical Engineering, a wife and two children, Jim worked in R&D at Lenkurt Electric along with John White VA7JW (a recent SARC meeting presenter). He went on to teach electronics at UBC, and in his early 50's, served as a Dean at College of the Rockies in Cranbrook before returning for a final stint at BCIT.

Over the years he's owned a few businesses, and can also take credit for having crafted a key patent for the Hydrogen Highway.

Professional and business activities did manage to interrupt VE7FO's ham hobby somewhat over the years. In the early 1970's he dropped out for a time, but after taking early retirement in 1997, he got back in on the invitation of a friend, who said "Hey, let's contest together, for old time's sake!" Taking up the invitation, Jim was reminded of just how much fun ham contesting is... and that marked the end of his budding amateur astronomy career. Getting all his gear out of storage, Jim decided to upgrade radios so he could jump right back into some serious contesting, and he's do

Over the years, Jim has been involved in various other aspects of Amateur Radio, including five years with VECTOR and running Field Days for VECTOR and, many years ago, the Burnaby club.

While not currently active on the local Nets, VE7FO has in past years been quite active on the BC Net, and on Regional Net 7, an area hierarchical message-moving network. Jim also helped to handle some traffic during the Katrina disaster, and supported the Salvation Army's em-comm during that situation.

At the moment, Jim is looking forward to adding 20 feet of tower to the roof of the Vancouver home he shares with his wife, Leanne. That, and a better antenna is all that stands between him and even more contesting fun. In the meantime, SARC members, this writer included, are very fortunate to be getting the benefit of his knowledge and experience in the contesting/skills training group.





## SEPARS Report Kelvin Hall VA7KPH



### Kids discovered amateur radio at the Surrey Museum

On Tuesday, March 20 from 2-4 p.m., at the Surrey Museum, the Surrey Emergency Program Amateur Radio Society (SEPAR) demonstrated amateur radio emergency communications for kids. The workshop focused on how amateur radio provides communities with emergency communications when commercial systems are not operational. The workshop provided the kids with a hands-on experience of how amateur radio systems work and the technology used. The workshop was well received thanks to the efforts of all of the SEPAR volunteers under the guidance of Marcy VE7JT and Fred VE7IO



Read the full story at [www.surreyleader.com/community/140363773.html](http://www.surreyleader.com/community/140363773.html)

Photos at [separ.shutterfly.com/](http://separ.shutterfly.com/)

### SEPAR Projects - Old and New

During the March Executive Meeting we discussed a number of old and new projects including:

- The SEPAR trailer is being wired for 110v and 12v and lighting
- The new radio equipment for the SEPAR trailer is now in SEPAR inventory from Burnaby Radio
- Business Case proposals for projects that SEPAR members may want to lead
- The new SEPAR Monthly Briefing format appears to be informative and is still being tweaked for content
- Using the D Star repeater as another option during an emergency is being tested via the informal Thursday night net at 1900 hrs
- The 2012 gaming grant proposal and ideas for projects - note deadline for suggestions to the executive is May 31st

### The acquisition of older amateur radios from the schools

SEPARS has received permission from ESS and the Surrey Emergency Program to move the radios as "grab n go kits" to the 5 district RCMP sub-offices. These "grab n go kits" will remain SEPARS property. This project will enable SEPARS members to

sign out the radios from the local district offices. It provides an ongoing maintenance program for the radios and it may become a vital link between the district offices and the EOC's. This will provide more interaction between the SEPARS operators and the RCMP members. Everything in emergency planning depends on relationships.

The production of SEPARS identity cards. When the radios are available for "sign-out" at the RCMP district offices, the SEPARS members will require SEPARS ID cards. We're working on the details, more information to follow as available.

### SEPAR Events Calendar

[separ.shutterfly.com](http://separ.shutterfly.com) - Click on the Calendar tab

- April 11, 2012 - EOC Exercise with the City of Surrey BC at Fire hall #1
- April 19, 2012 - Thursday evening workshop - NTS Message Handling
- April 26, 2012 - Annual General Meeting - election of Executive
- April 28, 2012 - ESS Exercise with the City of Surrey Emergency Social Service group
- May 5, 2012 - Saturday - Guilford Library workshop - Contact Marcy Lui VE7JT or Fred Orsetti VE7IO for more information

Internet sites for Emergencies

Emergency Management BC formerly Provincial Emergency Program (PEP) [www.pep.bc.ca/index.html](http://www.pep.bc.ca/index.html)

Latest Earthquakes in the World

[earthquake.usgs.gov/earthquakes/recenteqsww/](http://earthquake.usgs.gov/earthquakes/recenteqsww/)



*SEPAR Members take a break after putting in a hard day converting the new communications trailer... Well after all, it is April 1st!*





# News You Can Lose The Lighter Side of Amateur Radio

## The GADS Antenna

GADS sounded like an intriguing antenna design. Although I'd heard of this concept and the CLAW previously under a different name. As I found out later, GADS stands for Gutter and Downspout Antenna. You hook up a random wire tuner (like an Icom AH-4) and work the HF bands. The tuner is the off-white box near the base of the downspout in the photo.

Oh, and CLAW? That's the Clothes Line Antenna Wire of course.

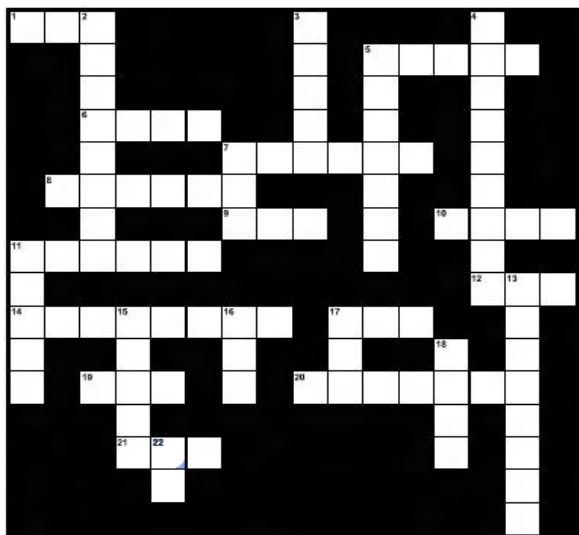


## LIFE BEFORE THE COMPUTER

- \* Memory was something that you lost with age
- \* An application was for employment
- \* A program was a TV show
- \* A cursor used profanity
- \* A keyboard was a piano
- \* A web was a spider's home
- \* A virus was the flu
- \* A CD was a bank account
- \* A hard drive was a long trip on the road
- \* A mouse pad was where a mouse lived
- \* And if you had a 3 1/2 inch floppy ....you just hoped nobody found out



Now here's a mobile antenna!



### ACROSS

1. Man made noise
5. Ampres given name
6. Radio League
7. Parallel conductor line
8. SARC President
9. Audio Video connector
10. Basic unit of power
11. Holds PCB parts
12. Heath
14. Radio Op Apr 15 1912
17. Microphone abbreviation
19. Digital mode
20. Potential difference
21. Canadian organization

### DOWN

2. One channel audio
3. 24 hr exercise day
4. Adjacent interference
5. Measure amps
7. Type of diode
11. Surrey Aux Comms
13. 2 frequency interference
15. optical transmission
16. Printed Circuit Board
17. Unit of conductance
18. Directional antenna
22. alternating current







## Tech Talk Why We Use Baluns

Jim Smith VE7FO

Before getting into this, it is necessary to describe a somewhat puzzling phenomenon (called "skin effect") associated with radio frequency currents.

### SKIN EFFECT

High frequency AC currents in a conductor flow only in that portion of the conductor which is very close to the surface. Very close being 0.1 mm (the "skin depth") or less. While a wire has only one surface, the shield on a coax cable, being a cylinder, has two surfaces - an inner surface and an outer surface. Consequently, you can have a high frequency AC current flowing on the inner surface and an entirely different one flowing on the outer surface, with neither of them affecting each other. It's like there's an insulator keeping them separated.

Weird but true.

### BALUNS

Unless precautions are taken to minimize it, all coax fed antennas will have significant current flowing on the outside of the coax shield while transmitting.

If the antenna is a horizontal dipole with the coax hanging straight down then the coax acts as a vertical antenna. This is because this current flowing on the outside of the shield will radiate energy exactly as a vertical antenna would.

For casual ham HF operation, this can be a good thing as radiation will take place over a wider range of elevation angles which in turn makes it possible to make contacts over a larger range of distances. However, for a communications antenna system designed to have a specific radiation pattern, this unwanted radiation from the coax changes the pattern and reduces the effectiveness of the system.

When receiving, the coax still acts as a vertical antenna and couples whatever it picks up into the actual antenna and from there into the receiver.

An example of these effects on a Near Vertical Incidence Skywave (NVIS) antenna system follows:

### TRANSMITTING

For NVIS the desired radiation elevation angles (the range in angles with respect to the horizon over which the antenna radiates most of the transmitted energy) is about 60 to 90 degrees, 90 degrees being straight up. A horizontal dipole 1/4 wavelength or less above ground will provide this.

If this antenna is fed with coax and no precautions are taken to minimize current flowing on the outside of the shield, the shield will act as a vertical antenna with a range of radiation elevation angles between about 5 to 40 degrees. The amount of power radiated at these low angles can be 50% of the power radiated at the desired elevation angles. This means that less power is available to be transmitted at the desired high angles. In addition, this power radiated at low angles can cause interference to other stations thousands of miles away.

### RECEIVING

This is where the coax shield acting as an antenna really sucks.

The shield, acting as a vertical antenna, will pick up those previously mentioned stations several thousand miles away and feed them into the dipole which will then happily send those signals to the receiver where they will interfere with the signals you want to hear.

In addition, most noise on the lower HF bands is caused by lightning in the tropics. If your antenna responds only to high angle signals (NVIS) it won't respond to these lightning induced static crashes because they arrive at low angles. Consequently, you won't hear them. However, if the coax shield is acting as an antenna you will hear them and they may make it impossible for you to copy the signals you want to hear.

Because the coax comes right into your station, it runs close to all kinds of noise generating equipment such as computer monitors, plasma TVs, switch mode power supplies, etc. Because the coax is acting as an antenna, it will pick up all kinds of garbage that the dipole won't hear because it's much further away from these noise sources.

### BALUNS TO THE RESCUE

Well, not just any old balun. "Balun" is a contraction of the phrase "balanced to unbalanced". An ideal horizontal dipole is said to be "balanced" with respect to ground. What this means is that:

The voltage between ground and the point where one wire of the feedline is connected to the antenna is exactly equal (but of opposite polarity) to the voltage between ground and the point where the other wire of the feedline is connected to the antenna.

The current flowing out of one wire of the feedline into the antenna is exactly equal to the current flowing into the other wire of the feedline out of the antenna.



This is an ideal which is never achieved in practice. Things like one end of the antenna being lower than the other, closer to a tree or building, etc., will all cause the currents in the two legs to be different. Consequently, no antenna is truly balanced. Some come close, though.

Feedlines such as the old TV twinlead, window line and ladder ("open wire") line are all considered to be balanced as they are symmetrical with respect to ground (as long as one side of the feedline isn't closer than the other to ground, metallic objects, etc).

Our transmitter outputs are "unbalanced" with respect to ground. This is because the outer shell of the output coax connector is connected directly to ground through the metal case of the radio. Similarly, the coax cable we connect to the transmitter is unbalanced as the shield is connected directly to ground via the coax connector on the radio.

So now we have a balanced antenna to which we want to connect an unbalanced coaxial cable. Physically, this is easy to do, we just connect them. But, as soon as we do, we destroy the balance of the antenna and we get current flowing on the outside of the coax shield with all the resulting bad effects.

So, what we need is a box between the antenna

and the coax to make the transition between the balanced antenna and the unbalanced coax feed line, and, yes, these boxes exist and they are called baluns.

There are two types of baluns:

### Voltage Baluns

These force the voltage between ground and the point where one wire of the feedline is connected to the antenna to be exactly equal (but of opposite polarity) to the voltage between ground and the point where the other wire of the feedline is connected to the antenna. The idea here is that, if the voltages are equal, the currents will be too.

However, as most supposedly balanced antennas are at least somewhat unbalanced, the currents in the two legs will not be the same. This causes a current equal to the difference between them to flow on the outside of the coax shield. i.e. the coax shield now acts as an antenna. Just what we DON'T WANT.

### Current Baluns (also known as "Current Chokes")

These force the currents in the two legs (halves) of the dipole to be equal. As there is now no difference in these current values, no current flows on the outside of the coax shield. This is just what we want, so these are the ones to use.

To see some test results for various baluns go to

[http://www.w8ji.com/Baluns/balun\\_test.htm](http://www.w8ji.com/Baluns/balun_test.htm)



Be warned, though, that the material presented is rather technical.

### SUMMARY

Every coax fed antenna system designed to have specific characteristics needs a current balun located at the transition between balanced and unbalanced. These are often built into VHF and UHF antennas (skirts, sleeves, etc.) but are generally separate items in HF systems.

Without a current balun the antenna is strongly coupled to the outside of the coax shield.

This means that energy transmitted by the antenna will be coupled into the coax shield which will reradiate it and thereby affect the radiation pattern of the antenna system.

It also means that signals picked up by the coax shield acting as an antenna will be coupled into the antenna and passed to the receiver.

It is important to note that, like any other conductor, the coax shield will pick up signals and reradiate them. The current balun simply ensures that these reradiated signals don't get coupled into the antenna and so don't reach the receiver.

### APPENDIX

#### SKIN EFFECT DETAILS

If you pass a DC current down a wire, the current flows uniformly down the wire. i.e. the amount of current flowing down the centre of the wire is the same as the amount of current flowing near the outer edges of the wire.

This is not true for AC currents. For a current with a frequency of 1 MHz in a copper wire, the current will be concentrated in a region with a depth of less than about 0.1 mm from the perimeter of the wire. This 0.1 mm is called the "skin depth". The skin depth gets smaller the higher the frequency. It doesn't matter if the wire is 1 cm or even 1 metre in diameter, only this 0.1 mm thick "skin" has significant current flowing in it.

See [http://en.wikipedia.org/wiki/Skin\\_depth](http://en.wikipedia.org/wiki/Skin_depth) but skip the eye-glazing math and check out the chart at the end.

As mentioned earlier, the shield of a coax cable isn't a wire with one surface - it is a cylinder with two surfaces, an inner and an outer. This means that, provided its thickness is more than a few skin depths at the frequency of interest, you can have a current flowing on the inside of the shield and an entirely different current flowing on the outside! This is because neither current penetrates far enough into the shield material to affect the other current. It's just as if there were an insulator keeping them separated.

The point to take away from all this is that, counter-intuitive as it may be, you can have two distinct AC currents flowing in a coax shield, one on the inner surface of the shield and one on the outer.

~Jim Smith VE7FO



## 'Net' Working Internet Resources and Tidbits for Hams

### Radio Propagation tutorial videos

Martin Lornton KD8LON has produced two tutorial videos explaining radio propagation.

Concepts covered in this Ham Radio tutorial:

- Ground wave propagation
- Sky wave propagation
- Ionosphere layers D, E, F
- Radio wave skip and hop zones
- Pedersen Ray
- E-M-E Earth Moon Earth radio communications
- Long path and short path radio waves

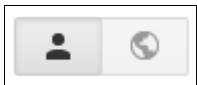
In Part A Martin goes through the theory of HF radio wave propagation. In Part B of this video he does a practical demonstration of shortwave radio reception through various radios and antennas and an antenna tuner.

Martin has several other videos and they are available at [youtube.com/playlist?list=PL1046BF440E9B07EF&feature=plcp](https://youtube.com/playlist?list=PL1046BF440E9B07EF&feature=plcp)

### Google Search

Did you know that when you search for something in Google, your results are personalized by default? That means that the search results you see when performing certain queries aren't results in their truest, most unbiased form!

**Method 1:** After performing a search, locate the



following two buttons:

Click the one on the right (the globe) and your results will refresh to yield unpersonalized results. This is a short-term solution, because as soon as you close the search window, Google will default you back to personalized results.

**Method 2:** After performing a search, on the left hand side, look for the "More search tools" link, then click it. From the links that drop down, click "Verbatim." As with the method above, your results will refresh to yield unpersonalized results. This is also a short-term solution for the same reason as the method above.

**Method 3:** This method will allow you to permanently prevent personalized results (until you clear cookies, that is) and is my preferred way to search Google. To start, [click on this link](#), then look for the following section on the page:

Personal results

Personal results help find relevant content that's personalized to you, including content and connections that only you can see.

☒ Use personal results
 ☐ Do not use personal results

Click the circle next to "Do not use personal results," then scroll down and click the save button. A window will tell you that your preferences have been saved. Close the window, then open a new one to perform a search. Your results should now be unpersonalized from here on out!

### NPR Interview

On a recent Thursday, NPR featured an excellent interview with Joe Kunches of NOAA's Space Weather Prediction Center in Boulder. Listen here as he gives a clear explanation of what a CME is, and talks about effects to Earth and satellites above:

[npr.org/2012/03/08/148246572/](http://npr.org/2012/03/08/148246572/)

### BBC - Morse Code Sound Sculpture

The BBC Radio 4 show 'Saturday Live' broadcast on March 10 featured Kevin Collins who recalls his fathers passion for Morse code.

Listen to Morse Code Sound Sculpture (starts at 31:16) at

[bbc.co.uk/i/b01d0fwz/](http://bbc.co.uk/i/b01d0fwz/)

Download the podcast from

[bbc.co.uk/podcasts/series/satlive](http://bbc.co.uk/podcasts/series/satlive)

### Collection of QRP Journal is online

The QRP Journal covered low power construction projects, and all editions from June 1993 until the final issue in 2004 are now available for free download

Doug, KI6DS writes:

I am pleased to announce that the complete collection of QRP Journal is now available online at the NorCal QRP Club website. Access is free, and always will be. We do ask that none of the material be reposted anywhere in any form, and we especially ask that CD's of the material not be made or distributed in any manner, except for 1 copy for your own archival purposes. In other words, we want the only site that it is available to be the NorCal site. We thank you in advance for your cooperation

Enjoy the issues.



## QRM ...from the Editor's shack

*Do you have a photo or bit of club news to share?  
Something to sell or something you are looking for?  
Email it to [ve7ti@separs.net](mailto:ve7ti@separs.net) for inclusion in this column.*

### More New Hams

New Hams as of Friday, March 16th [Left to Right] - All passing their BASIC with honours in the low to mid 80 percentile.

- Marc West, VA7WAM
- Clifton Cunningham, VA7CLI
- Kimberly Moreau, VA7KMO
- Andrew Walt, VA7OCN
- Paul MacDonald, VA7ZZT



Two others did not complete the course due to work scheduling and illness. Both may return in the fall to complete their training or complete the training on their own.

- Gary VE7AS



### Vancouver Sun Run April 15, 2012 – Request for Amateur Radio Volunteers

Once again we are seeking volunteers from the Amateur Radio community to provide communications for the Vancouver Sun Run which takes place on Sunday, April 15, 2012.

This is a tremendous opportunity to showcase the capabilities of Amateur Radio to the community, support an outstanding event, provide a valued community service and as a bonus you receive a very cool Sun Run 2012 T-

shirt! As in prior years, an on-line registration website is available for registration of volunteers. The website is now available for registration at:

<http://sunrun.bcwarn.net>

Registration is simple and straightforward process. The registration form is used to provide up-to-date contact information, your first and second preference for course position and your T-shirt size. Wherever possible we will accommodate your stated preferences for positions around the course, however we reserve the right to assign you to positions as required ensuring adequate coverage of the event.

### Looking For A Tracker?

Here is an opportunity to get in on a volume purchase (and therefore reduced price) on an APRS Tracker, a Byonics Micro-Trak AIO (see <http://www.byonics.com/mt-aio>). If interested, please contact Neil King VA7DX at [neil.king@telus.net](mailto:neil.king@telus.net)

### Wanted

75 ft. of RG8 or RG213 used coax in good condition at reasonable price for use by member on limited income. Contact Jinty Reid VE7JMR at 604-635-3724.

### ARDF (Fox Hunting)

We are starting the ARDF 2012 season with a training session in Robert Burnaby Park in Burnaby.

Meeting location: South-East corner of the park (intersection Hill Ave and Wedgewood, Google coordinates 49.23181, -122.92805). We will be looking for 5 foxes on the 2m band. Feel free to bring your friends and family members. We will have some equipment to loan and a map of the park will be provided.

Please RSVP if you are coming to this event.

<http://www.bcradiosport.ca>

Amel [akrdzalic@gmail.com](mailto:akrdzalic@gmail.com)

- Training 2m band, April 14, 10am, Central Park, Burnaby, BC
- Training 2m band, April 28, 10am, Watershed Park, Surrey, BC





## RAC News Radio Amateurs of Canada

### Special Event Stations WARD

On April 18, 2012 we will celebrate the World Amateur Radio Day on the 87th Anniversary of the founding of the International Amateur Radio Union, IARU.

This year's theme for the World Amateur Radio Day is "Amateur Radio Satellites: Celebrating 50 Years in Space" in remembrance the launching of OSCAR 1 on December 12, 1961 and the launch of OSCAR 2 on June 2, 1962.

For this reason there will be several special event stations from IARU's Member Societies active on different dates during April: 6H6IARU, 3G73IARU and LZ1WARD.

If IARU's Member Societies plan to have a special event station for this reason in April let us now so we can publish the details before the end of this month. Send us an email to [news@iaru-r2.org](mailto:news@iaru-r2.org) with the information.

### New ARES logos

The ARES/SURA logo shown, designed by Tyler Tidman VA3DGN in color and monochrome, are now available for use by all ARES/SURA members and groups.

The black and yellow will be used on a "go forward" basis for caps, shirts, crests etc, while the black and white lends itself well when used in print form. Making these logos available in both official languages illustrates the RAC Field Organization's desire to grow the ARES network in all areas of Canada, and I would like to sincerely thank Tyler for his assistance in bringing these to you.



### The Society of Newfoundland Radio Amateurs (SONRA) will make history on April 25, 2012

April 25th each year marks the birthday of Guglielmo Marconi, who received the first wireless signal at Signal Hill, Newfoundland. This April 25th, SONRA will celebrate the event with making an Amateur Radio contact with Princess Elettra (Marconi) who will be in Bologna Italy to celebrate her father's birthday. It is planned to have the Canadian Heritage Minister, the NL Premier, the City of

St. John's Mayor along with the NL Lieutenant Governor, exchange greetings with the Princess via Amateur Radio from VO1AA at Cabot Tower.



This is the first time that this event has been attempted, and it is anticipated that it will be a high level media exposure for Amateur Radio in Canada.

SONRA appreciates the wonderful relationship that it enjoys with Parks Canada, Signal Hill National Historic Site, and looks forward to many years of commemorating this important event.

### Special Callsign GB100MGY

We have obtained and will be operating GB100MGY callsign on all amateur bands from FORT PERCH ROCK MARINE RADIO MUSEUM NEW BRIGHTON WIRRAL U.K. Dates from 6th April until 26th April on CW and SSB.

We also have special permission to use above callsign on the 501khz-504khz band from the 12th April until 18th April and will be transmitting on 502khz CW and for those people without a 500khz band license a crossband QSO on 3566 khz or 7066khz as propagation conditions permits.

This event is to mark the 100th anniversary of the Titanic disaster in 1912. We are also having a special overnight operation on 14th/15th April, the date Titanic sank, this will be concentrated mainly on the 502khz as it was the 500khz band where the Titanic made her CQD and later on the SOS distress calls/messages.



We are hoping for a Pond Hop to East coast area Canada on the 502khz band with suitable conditions at that time. Please ask your amateur radio friends in Canada to listen out for us and include our callsign in your news bulletins.

Our websites are:-

[fortperchrockmarineradiomuseum.co.uk](http://fortperchrockmarineradiomuseum.co.uk) and also for this event is [gb100mgy-fortperchrock.co.uk](http://gb100mgy-fortperchrock.co.uk)



## More News VA7XB's Junk Comes Home... After 50 Years

I was licensed in 1960 when I was in 10th grade at Prince of Wales High School. After graduating in 1962 I put ham radio aside as I began my Engineering education. My ham radio gear in those days consisted of mostly post WW2 vintage odds and ends of the "low budget" variety, scrounged, donated by ham friends or purchased with paper route earnings.

Before retirement, my father worked at C Gardner Johnson, ships agents in Vancouver for the Swedish Johnson Line and Japanese Mitsui OSK. One of his colleagues was a man which we children only knew as "Mr. Garrett". Since I knew that there would be no ham radio in my life for a few years, I disposed of all my gear. The receiver, a military version RCA ACR-3 behemoth weighing about 100 lb, went to an aspiring ham in the neighbourhood named Bill Coltart who, through research on the RAC registry, I find is VE7BMM. The remainder went to my father's colleague, "Mr. Garrett" whose son, I was told, was interested in ham radio.

I never met the son, and wondered if he had gone on to get licensed and involved in the hobby. Now I know. He is our Brett Garrett VE7GM, a relatively new member of SARC and now a Director, who, like me, came back to the hobby after several decades away and was featured in last month's "RadioActive". Garrett is an enthusiastic participant in club activities, including the CW subgroup of the "Operator Skills Training" and contesting program

started last Fall. The photo shows Brett returning the "junk", including a Harvey Wells TBS-50 transmitter to its former owner. Can anyone out there use a boat anchor?

~John VA7XB



John VA7XB and Brett VE7GM

## Amateur Radio Stamp for Luxembourg



The ARRL report that the Réseau Luxembourgeois des Amateurs d'Ondes Courtes (RL) - that country's IARU (International Amateur Radio Union) member-society - is celebrating its 75th anniversary.

In honor of this milestone, Luxembourg's Entreprise des Postes et Télécommunications (P&TLuxembourg) has issued a €0.60 postage stamp (about 80 cents in US dollars). P&TLuxembourg is that country's government owned corporation for mail and telecommunications. This is one of three commemorative stamps issued by Luxembourg in 2012.

There are about 500 radio amateurs in Luxembourg. As part of the 75th anniversary celebrations the RL is launching a special RL 75th Anniversary Award. During 2012 the special callsign LX75RL will be activated by its members and counts towards the award.

Further details at [http://www.rlx.lu/lx\\_awards\\_files/rl\\_75.htm](http://www.rlx.lu/lx_awards_files/rl_75.htm)



## SURREY AMATEUR RADIO CLUB 2012 RDF Foxhunt

**Saturday May 12, 2012 at  
Crescent Park, South Surrey**

**Registration & Instructions 0800 - 0900  
Foxhunt commences at 0900 with barbeque at 1200**

To participate, you need a 2 m handheld radio. However, if you are a beginner, or don't have a radio, then come anyhow! You can be part of a more experienced team or we may have some spare equipment that you can use.

**Talk-in 147.360+ (110.9 tone)**

**FOXHUNT – NO CHARGE; BARBEQUE \$10**

All are welcome, but we ask that you RSVP Anton James VE7SSD  
[jamesadf@shaw.ca](mailto:jamesadf@shaw.ca) and indicate if you plan to attend foxhunt or BBQ or both

To get there, take Crescent Rd. west from King George Highway near Hwy 99,  
& turn off at 129<sup>th</sup> St. to parking & assembly area

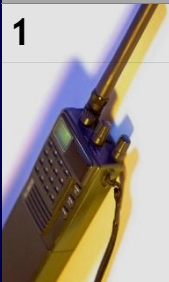


### **Next SARC Meeting**

**Wednesday, April 11, 2012**

The next meeting of the Surrey Amateur Radio Club will feature  
'Solar Effects on Propagation'. Hope to see you there!

# The SARC Calendar ...all about the Amateur Radio month ahead in Surrey

| April 2012                                                                                    |           |                                                                                                                                                                                            |                                       |                        |                                                                                                                        |                                                                           |
|-----------------------------------------------------------------------------------------------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|------------------------|------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| Sunday                                                                                        | Monday    | Tuesday                                                                                                                                                                                    | Wednesday                             | Thursday               | Friday                                                                                                                 | Saturday                                                                  |
| <b>1</b><br> | <b>2</b>  | <b>3</b>                                                                                                                                                                                   | <b>4</b>                              | <b>5</b><br>Ham Class  | <br>SARC Good Friday Breakfast 8:30 | <b>7</b>                                                                  |
| <b>8</b><br>Easter Sunday                                                                     | <b>9</b>  | <b>10</b><br>SEPAR NET 7:30<br>SARC NET 8:00                                                                                                                                               | <b>11</b><br>SARC General Meeting 7pm | <b>12</b><br>Ham Class | <b>13</b><br>Weekly SARC Breakfast 8:30<br>ABC Restaurant<br>74th & King<br>George Blvd.                               | <b>14</b> Contest:<br>SEPAR Seattle Com Acad Trip                         |
| <b>15</b> Contest:<br>SUN RUN                                                                 | <b>16</b> | <b>17</b><br>SEPAR NET 7:30<br>SARC NET 8:00                                                                                                                                               | <b>18</b>                             | <b>19</b><br>Ham Class | <b>20</b><br>Weekly SARC Breakfast 8:30<br><br>TARA SKIRMISH RTTY                                                      | <b>21</b> Contest:<br>ONTARIO QSO PARTY CW, SSB<br><br>TARA SKIRMISH RTTY |
| <b>22</b> Contest:<br>ONTARIO QSO PARTY CW, SSB<br><br>TARA SKIRMISH RTTY                     | <b>23</b> | <b>24</b><br>SEPAR NET 7:30<br>SARC NET 8:00                                                                                                                                               | <b>25</b><br>SARC Exec Mtg. 7:00      | <b>26</b><br>Ham Class | <b>27</b><br>Weekly SARC Breakfast 8:30                                                                                | <b>28</b> Contest:<br>Florida QSO Party SSB/CW                            |
| <b>29</b> Contest:<br>Florida QSO Party SSB/CW                                                | <b>30</b> | <b>1</b><br><br>For details on all SARC events, go to <a href="http://ve7sar.net">ve7sar.net</a><br><br>For details on all SEPARS events, go to <a href="http://separs.net">separs.net</a> | <b>2</b>                              | <b>3</b>               | <b>4</b>                                                                                                               | <b>5</b>                                                                  |

Contest Details: <http://hornucopia.com/contestcal/contestcal.html>





**QRT** John Brodie VA7XB

## SARC's Board of Directors

Brett Garrett VE7GM - although he couldn't be present due to illness at our last meeting when the announcement was made - has accepted a position as pro tem Director pending elections at the AGM in June. While Brett was licensed many years ago but was inactive for several decades, he has recently reignited the flame and taken up Amateur Radio to the benefit of SARC following his retirement from an active professional life.

## Foxhunt

SARC's foxhunt and barbecue at Crescent Park have become an annual event that attracts Radiosport aficionados not only from clubs around the Lower Mainland but also Vancouver Island. The event is organized by SARC's Anton James VE7SSD and Amel Krdzalic VA7KBA of BC Radiosport. Amel generally supplies the foxes and the technical expertise (see invitation and equipment construction information elsewhere in this month's Communicator). We hope to attract some new participants who, at the most basic level, need no more than a handheld VHF radio. However, to be a more serious competitor, it is worth constructing a directional antenna and an attenuator for your radio. The most recent issue of *the Canadian Amateur* featured an article by Lou Beaubien VE7CGE providing some construction and Foxhunting advice. If you would like to get involved in this year's SARC Foxhunt, please contact Anton at [jamesadf@shaw.ca](mailto:jamesadf@shaw.ca) and he will assist you in assembling the equipment to get you started. SARC's foxhunt will be held on May 12<sup>th</sup>. Come prepared with wet weather gear if it looks like rain.

## FD Planning

It's getting close to that time again when we must think seriously about Field Day, put our collective minds to finalizing the site, assigning responsibilities and

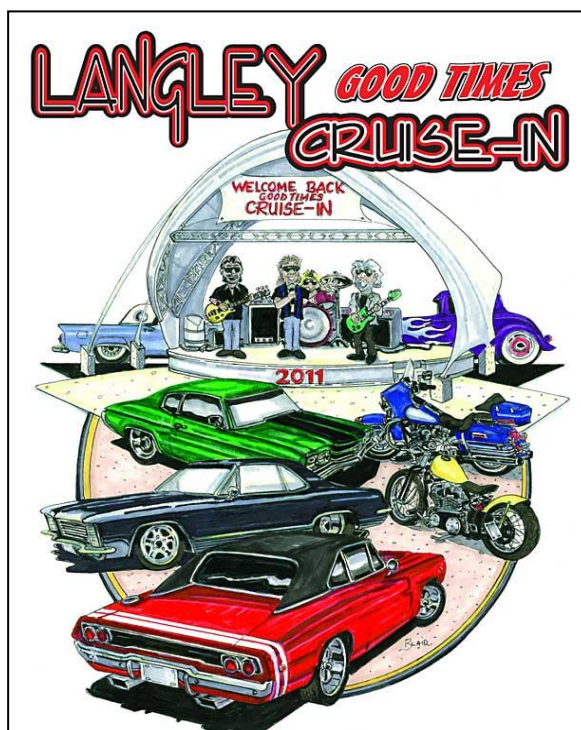
getting the many details organized. We will be asking for volunteers for the numerous tasks required to make it a success. Once again, the ICS structure will be used as a training tool. Leading up to the event, members of the operator skills training group will continue to hone their skills on SSB, CW and RTTY so that we can make that big effort to improve last year's score. As usual, we will team up with Langley Amateur Radio Association to combine our skills and equipment. The actual site for this year's effort is yet to be confirmed.

## Elmers Team

A unique aspect of our ham radio hobby is the willingness of experienced hams to assist those less experienced. The mentors are known as "Elmers". Several senior members of SARC and SEPARS have volunteered to form an official "Elmers Team" for the benefit of beginners and others in the club needing advice or assistance in getting on the air. Whether it be erection of antennas, advice on appropriate gear and its operation, or help with the operation of equipment, the group will do its best to get you to an operating status so that you may participate in

the ham radio area of your choice - traffic nets, Radio Sport (RDF), emergency preparedness, contesting or DXing (for example).

So far the Elmers Team is comprised of John VE7TI, Brett VE7GM, Kelvin VA7KPH and John VA7XB. If you have appropriate experience and would like to join the Team, please let one of the foregoing persons know about it. Also... if you have equipment to donate, please let us know so that it can be made available to those who are on limited budgets. Or, if you are one of the many that could use some help, don't be bashful and let one of us know. Best way is to send an email to [va7xb@rac.ca](mailto:va7xb@rac.ca) and tell us in a few words the nature of the assistance you require. We will do our best to provide that help as quickly as possible so that you may get the most out of this great hobby.



*Remember that our partner club, LARA, has invited us to join them in selling raffle tickets at the "Cruise-in" event in Langley to be held in September. LARA has applied to have a table at the "Cruise-in" which attracts thousands of visitors, providing an ideal opportunity for fund raising.*

*More details to follow.*